

International Forestry

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TREE PLAN FOR 12626 NE 105th PL Kirkland, WA

PARCELs #6743700315



December 7th, 2010

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Copy of site/tree plan - attached

1. Introduction

International Forestry Consultants (INFO) was contacted by Percy Tse and was asked to compile a 'Tree Plan Report' for 2 parcels located within the City of Kirkland, WA.

The proposed short plat development encompasses the following properties, parcel: #6743700315, known as 12626 NE 105th PL and potentially parcel #6743700317, known as 10448 – 126th Avenue NE. Our assignment is to prepare a written report on present tree conditions, which is to be filed with the preliminary permit application.

For Parcel #6743700315, this report encompasses all of the criteria set forth under the City of Kirkland's tree regulations (Chapter 95 of the Kirkland Zoning Code).

For Parcel #6743700317, tree information was gathered for future information related to the development of this parcel.

Date of Field Examination: December 2, 2010

2. Description

27 "significant" trees were located and assessed on the subject properties. See 'Tree Map' for tree locations. See 'Tree Summary Tables' for specific tree information. Both documents are attached and are part of this report.

Another 19 trees were assessed that are situated on neighboring properties with drip-lines that encroach upon the subject properties. The majority of these are located on the adjacent properties to the east.

All of the significant trees on the parcel were identified in the field with a numbered aluminum tag, attached to the tree at DBH (diameter at breast height, 4.5 feet above ground).

3. Methodology

Each tree in this report was visited. Tree diameters were measured by tape. The tree heights were measured using a Spiegel Relaskop. Each tree was visually examined for defects and vigor. The tree assessment procedure involves the examination of many factors:

- The crown of the tree is examined for current vigor. This is comprised of inspecting the crown (foliage, buds and branches) for color, density, form, and annual shoot growth, limb dieback and disease. The percentage of live crown is estimated for coniferous species only and scored appropriately.
- The bole or main stem of the tree is inspected for decay, which includes cavities, wounds, fruiting bodies of decay (conks or mushrooms), seams, insects, bleeding, callus development, broken or dead tops, structural defects and unnatural leans. Structural defects include crooks, forks with V-shaped crotches, multiple attachments, and excessive sweep.
- The root collar and roots are inspected for the presence of decay, insects and/or damage, as well as if they have been injured, undermined or exposed, or original grade has been altered.

Based on these factors a determination of viability is made. Trees considered not viable are trees that are in a poor condition due to disease, extensive decay and/or cumulative structural defects, which exacerbate failure potential.

A "viable" tree is a tree found to be in good health, in a sound condition with minimal defects and is suitable for its location. Also, it will be wind firm if isolated or left as part of a grouping or grove of trees.

4. Observations

Subject trees are comprised of a mix of planted deciduous and coniferous trees. Douglas-fir is the most common species, all of which were planted approximately 25 to 30 years ago. The subject trees are described as follows.

Tree #101 is a mature flowering cherry. The diameter was measured at one foot above ground, because the main trunk forks blow DBH into multiple scaffolds. No concerning defects were observed. Vigor appears good.

Tree #102 is a young to semi-mature Douglas-fir, situated close to the east property line. It has a slight natural lean to the southwest, away from neighboring poplar trees. Foliage is of excellent color and density. No concerning defects were observed.

Tree #103 is a semi-mature to mature Scots pine, also situated close to the east property line. It also leans southwest away from neighboring poplar trees. The lower trunk has excessive sweep but is not considered a major defect. Overall condition is fair.

Tree #104 is a young to semi-mature Douglas-fir, also situated near the east property line, close to the northeast corner. Vigor appears good. The main central leader appears to have broken out of the tree in a recent windstorm. Foliage is of good color and density. No major defects were observed.

Trees #105 and #106 are semi-mature green ash trees, situated close to the north property line. Tree #105 is in good condition, with typical form or architecture. No noteworthy defects were observed. Tree #106 is suppressed by trees #105 and #107, and has developed poor branch structure as a result. Portions of the top have broken out in the past. Crown cleaning is recommended to improve branch structure. Overall condition is fair.

Trees #107, #108, #109, #110 and #111 are semi-mature Douglas-firs. All are of similar age and size, likely planted at the same time. Foliage color and density is excellent, with full crowns. #107, #108 and #111 have been recently crown raised, mainly on their north sides by the adjoining property owner. The trunk of tree #110 forks into codominant stems at approximately 20' above ground. Significant included or embedded bark is visible from the ground. Isolating this tree may cause it to fail; it should only be retained as a part of a grouping.

Trees #112 is a semi-mature to mature Austrian pine. The root plate has shifted in the past, causing the tree to lean heavily to the west, resting on the fence. This has compromised stability and cannot be corrected. It is considered non-viable.

Trees #113 through #121 are semi-mature Douglas-firs. All are of similar age and size, planted at the same time. Foliage color and density is excellent. Most have developed good trunk taper with full crowns. Trees #113, #114, #118, #119 and #120 are in good condition with no concerning defects.

Trees #115 and #116 are attached at the base, where they fork from a single trunk at 2' above ground. The buildup of included or embedded bark between these two trees is significant. Tree #117 also forks into codominant stems at approximately 16' above ground. Trees #115, #116 and #117 cannot be isolated. They should only be retained as a large grouping. Tree #121 has developed poor form or architecture, attributable to completion for sunlight with the adjacent cherry cluster. The main trunk has several minor to moderate structural defects. Failure risk is low, overall condition is fair at best.

Trees #122, #123 and #124 are mature bitter cherry, *Prunus emarginata*. This is a native, pioneer species. Tree #122 leans to the north over the adjacent property. Tree #123 also leans north. Over 90% of this tree is over the neighboring property to the north. Tree #124 has two large cavities on the southwest side of the trunk, where significant stem decay is visible. This decay appears to be associated with sunscald or an past injury.

The entire cluster is in fair to poor condition, due to defects, leans and age. The subject cluster is a liability. Tree parts will most likely fall into the neighbor's property when upper crown components fail. The cluster is mature, and not expected to survive for more than another decade.

Tree #125 is a semi-mature Colorado blue spruce. It is situated close to the existing driveway. The foliage is of good color and density, with a full crown. No evidence of insect problems or disease was observed. Growth is typical for the species. It is in good condition.

Tree #126 is a mature Portuguese laurel. The main trunk forks at 2' above ground into two 9" stems or individual trunks. Stem attachments to the trunk appear sound. Vigor is good. No evidence of disease, insect infestation or foliar problems was observed. Overall condition is fair.

Tree #127 is another semi-mature Douglas-fir. It appears this tree has developed in an open grown environment, as evidenced by trunk taper. The crown is unusually narrow, and appears to be subjected to frequent winds. Foliage is of good color and fair density. The main trunk has some minor structural defects. It is in fair to good condition overall.

Neighboring Trees

Trees #201, #202 and #203 are semi-mature to mature Douglas-fir trees situated on the adjacent property to the east, roughly 2' to 3' off of the property line. The tops of trees #201, #202 and #203 were removed in the past, several years ago, and have compromised the structure of #202 and #203. The tops were cut at approximately 24' above ground. #202 has multiple regenerated tops, which are high risk for splitting off of the main trunks. #203 has a deformed top and is at moderate risk for breakage at the topping point. Tree #201 is considered a low to moderate risk for stem breakage and is in fair condition. Trees #202 and #203 are in fair to poor condition.

Tree #204, a mature Douglas-fir is situated approximately 5' to 6' off of the east property line. This tree was not topped in the past. The foliage is of good color and density is average. The south side of the crown has an unusually large number of branch failures. No major defects were identified on the trunk or upper bole. Overall condition is fair.

Trees #205 through #217 are a row of Lombardy poplar trees, also situated on the neighboring property to the east. Trees are located 2' to 4' off of the property line. These poplar trees vary in age and size, from semimature to mature. This is a very fast growing and short-lived species. Decline after 30 years is not uncommon. Total heights range from 75' to 120'. Most of these appear to be sound and in fair condition. The main trunk of Tree #206 forks at approximately 50' above ground into codominant stems. Failure risk is moderate to high.

Tree #218 is a mature purple leaf plum situated on the neighboring property to the north. This multi-stemmed tree has developed poor form, mainly due to neglect and poor past pruning practices. It is situated well off of the property line. Overall it is in fair to poor condition.

Tree #219 is a mature balsam poplar, situated on the neighboring lot to the west, which is currently under development. It is situated over 10' off of the property line. The tree was recently crown cleaned. No concerning defects were observed. An old cavity exists on the lower trunk. Woundwood development is good. Vigor appears good as well. Overall it is considered to be in fair to good condition.

5. Discussion

Limits of disturbance for all trees have been evaluated on the ground. These limits are based on the species tolerance of root disturbance, existing improvements, drip-line radius, and past experience supervising soils excavations near the same tree species and sizes.

The extent of driplines (farthest reaching branches) and recommended "Limits of Disturbance" measurements can be found on the tree summary table at the back of this report. These have also been delineated on a copy of the site plan. The information plotted on the site plan for trees to be retained needs to be transferred to the final plans for the City.

Increasing the setback on the east property line at the south and north ends will aid in limiting impacts to neighboring trees and parcel trees to be retained in the northeast corner. A 7 ½ foot setback on this east perimeter, adjacent to neighboring trees #201 through #206, with no disturbance allowed within would be appropriate for tree protection. Encroaching closer may have adverse impacts on structural stability and health. The east property line setback could be reduced to 5' adjacent to trees #207 through #214 to allow more buildable space while adequately protecting neighboring trees. A 5 foot setback on the west property line is appropriate and should not have consequential impacts on neighboring trees.

Several trees on the perimeter are well situated for successful retention if tree protection measures are adhered to.

6. Tree Protection Measures

The following guidelines are recommended to ensure that the designated space set aside for the preserved trees are protected and construction impacts are kept to a minimum. Standards have been set forth under Kirkland Zoning Code 95.35.6 of Chapter 95. Please review these standards prior to any development activity.

- 1. Tree protection fencing should be erected per attached tree plan prior to moving any heavy equipment on site. Doing this will set clearing limits and avoid compaction of soils within root zones of retained trees. Fencing should only be moved to the "Limit of Disturbance" just prior to the commencement of any authorized work.
- 2. Excavation limits should be laid out in paint on the ground to avoid over excavating.
- 3. Excavations within the drip-lines or up to the "Limits of Disturbance" shall be monitored by a qualified tree professional so necessary precautions can be taken to decrease impacts to tree parts. A qualified tree professional shall monitor excavations when work is required and allowed within the "limits of disturbance".
- 4. To establish sub grade for foundations, curbs and pavement sections near the trees, soil should be removed parallel to the roots and not at 90 degree angles to avoid breaking and tearing roots that lead back to the trunk within the drip-line. Any roots damaged during these excavations should be exposed to sound tissue and cut cleanly with a saw. Cutting tools should be sterilized with alcohol.
- 5. Areas excavated within the drip-line of retained trees should be thoroughly irrigated weekly during dry periods.
- 6. Preparations for final landscaping shall be accomplished by hand within the driplines of retained trees. Large equipment shall be kept outside of the tree protection zones.

7. Tree Replacement

Significant trees to be retained on the property will exceed the required minimum tree density. However, trees will most likely be planted to enhance final landscaping. Refer to the *Kirkland Plant List* for desirable species.

Openings on the perimeter would be ideal locations for new trees. Recommended species are native coniferous species of Douglas-fir and/or western red cedar. Both of which provide excellent screening for many years.

For planting and maintenance specifications, refer to chapters 95.45 and 95.50 of the Kirkland Zoning Code.

8. Monitoring Tree Health

As your trees mature, you should be aware of the following conditions that may be indicators of declining tree health.

- o Appearance of fungal fruiting bodies which will appear as small "shelves" on the bole and branches or mushroom-like growths near the base of the tree.
- o Dead or soft flaky wood in cavities or under the bark.
- Thinning crowns.
- The appearance of yellow or orange needles other than near the stem. (Cedar trees may exhibit orange needles in the fall; called "flagging" that is a normal response to drought and not a symptom of long-term decline.)
- Leaning stems, extraordinary bark flaking, stem swelling or any other abnormalities on the bole.
- o Extraordinary cone production.
- o Insect entry holes. These are about the size of a pencil lead and probably are accompanied by "sawdust".
- Premature leaf-fall or the appearance of dead limb tips. Droopy top or thinning crown.
 Dying treetop.

There is no warranty suggested for any of the trees subject to this report. Weather, latent tree conditions, and future man-caused activities could cause physiologic changes and deteriorating tree condition. Over time, deteriorating tree conditions may appear and there may be conditions, which are not now visible which, could cause tree failure. This report or the verbal comments made at the site in no way warrant the structural stability or long term condition of any tree, but represent my opinion based on the observations made.

Nearly all trees in any condition standing within reach of improvements or human use areas represent hazards that could lead to damage or injury.

Please call if you have any questions or I can be of further assistance.

Sincerely,

Bob Layton

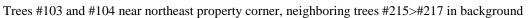
ISA Certified Arborist #PN-2714A

Bon Dayton

Certified Tree Risk Assessor #233



Tree #101, with neighboring trees #201 > #204 in background, large shrub on right is a beaked hazelnut







Root plate failure of tree #112, tree #111 in background







Tree #121 in forefront, Trees #122>#124 in northwest corner, most of tree leans over neighboring property



Base of tree #124, stem decay associated with sunscald damage or old injury





City of Kirkland - Tree Protection Standards

- Tree Protection Fencing shall be erected at prescribed distance per arborist report. Fences shall be constructed of chain link and be at least 4 feet high.
- Install highly visible signs on protection fencing spaced no further than 15 feet apart. Signs shall state "Tree Protection Area-Entrance Prohibited", and "City of Kirkland" code enforcement phone number.
- No work shall be performed within protection fencing unless approved by Planning Official. In such cases, activities will be approved and supervised by a "Qualified Professional".
- 4. The original grade shall not be elevated or reduced within protection fencing without the Planning Official authorization based on recommendations from a qualified professional.
- 5. No building materials, spoils, chemicals or substances of any kind will be permitted within protection fencing.
- 6. Protection Fencing shall be maintained until the Planning Official authorizes its removal.
- 7. Ensure that any approved landscaping within the protected zone subsequent to the approved removal of protection fencing be performed with hand labor.

In addition to the above, the Planning Official may require the following:

- a. If equipment is authorized to operate within the root zone, the area will be mulched to a depth of 6" or covered with plywood or similar material to protect roots from damage caused by heavy equipment.
- Minimize root damage by excavating a 2-foot deep trench, at edge of protection fencing to cleanly sever the roots of protected trees.
- c. Corrective pruning to avoid damage from machinery or building activity.
- d. Maintenance of trees throughout construction period by watering and fertilization.

Trees on Parcel #6743700315 - 12626 NE 105th PL

Tag #	Species	DBH	Condition	Credits	Proposal
101	cherry - ornamental	13	fair to good	2.5	Remove
102	Douglas-fir	24	good	8	Remove
103	Scots pine	15	fair	3.5	Retain
104	Douglas-fir	19	good	5.5	Retain
105	green ash	14	good	3	Retain
106	green ash	8	fair	1	Remove
107	Douglas-fir	22	good	7	Retain

Trees on Parcel #6743700317 - 10448 126th Ave. NE

Tag #	Species	DBH	Condition	Credits	Proposal
108	Douglas-fir	20	good	6	
109	Douglas-fir	19	good	5.5	
110	Douglas-fir	25	fair-poor	na	
111	Douglas-fir	25	good	8.5	
112	Austrian pine	14	poor	na	Non-viable
113	Douglas-fir	23	good	7.5	
114	Douglas-fir	20	good	6	
115	Douglas-fir	15	fair	na	
116	Douglas-fir	16	fair	na	
117	Douglas-fir	25	fair	na	
118	Douglas-fir	22	good	7	
119	Douglas-fir	24	good	8	
120	Douglas-fir	18	good	5	
121	Douglas-fir	19	fair	5.5	
122	bitter cherry	14	fair-poor	na	
123	bitter cherry	13	fair	2.5	
124	bitter cherry	13	poor	na	Non-viable
125	Colorado blue spruce	13	fair	2.5	
126	Portuguese laurel	9	fair	1	
127	Douglas-fir	27	fair-good	9.5	

Tree Density Calculation - Parcel #6743700315 - 12626 NE 105th PL

Property Size – +/- 16,785 sq.ft.
16,785/43,560 X 30 = 11.56
Required Minimum Tree Density = 11.5 tree credits
Tree Credits Retained = 19
Supplemental Trees Required = **0**

Tree Summary Table

International Forestry Consultants, Inc

For: Percy Tse

12/2/2010 12626 NE 105th PL Inspector: Layton Parcel 6743700315

Native/

Planted/ Tree

Tree/Tag a	Species	Voluntee	DBH	Height	Credit	Drip-Li	ine/Limits o	f Disturband	ce (feet)	Condition	Viability	Comments
						N	S	E	W			
101	cherry - ornamental	Р	13	19	2.5	17/10	14/10	9/na	14/10	fair to good	viable	large spreading crown
102	Douglas-fir	Р	24	98	8	18/12	18/12	na	19/10	good	viable	slight lean SW, full healthy crown
103	Scots pine	Р	15	67	3.5	3/na	16/12	na	19/12	fair	viable	leans SW, poor form, healthy
104	Douglas-fir	Р	19	75	5.5	15/na	15/12	na	19/12	good	viable	old broken top, good color
105	green ash	Р	14	59	3	na	18/10	14/10	18/12	good	viable	typical form, no concerns
106	green ash	Р	8	25	1	na	14/8	10/na	10/na	fair	viable	suppressed, old broken top
107	Douglas-fir	Р	22	83	7	na	23/13	16/12	8/na	good	viable	slight lean SW, recent crown raising
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Parcel Trees - Drip-Line and Limits of Disturbance measurements from face of trunk Trees on neighboring properties - Drip-Line and Limits of Disturbance measurements from property line

Tree Summary Table

International Forestry Consultants, Inc

For: Percy Tse

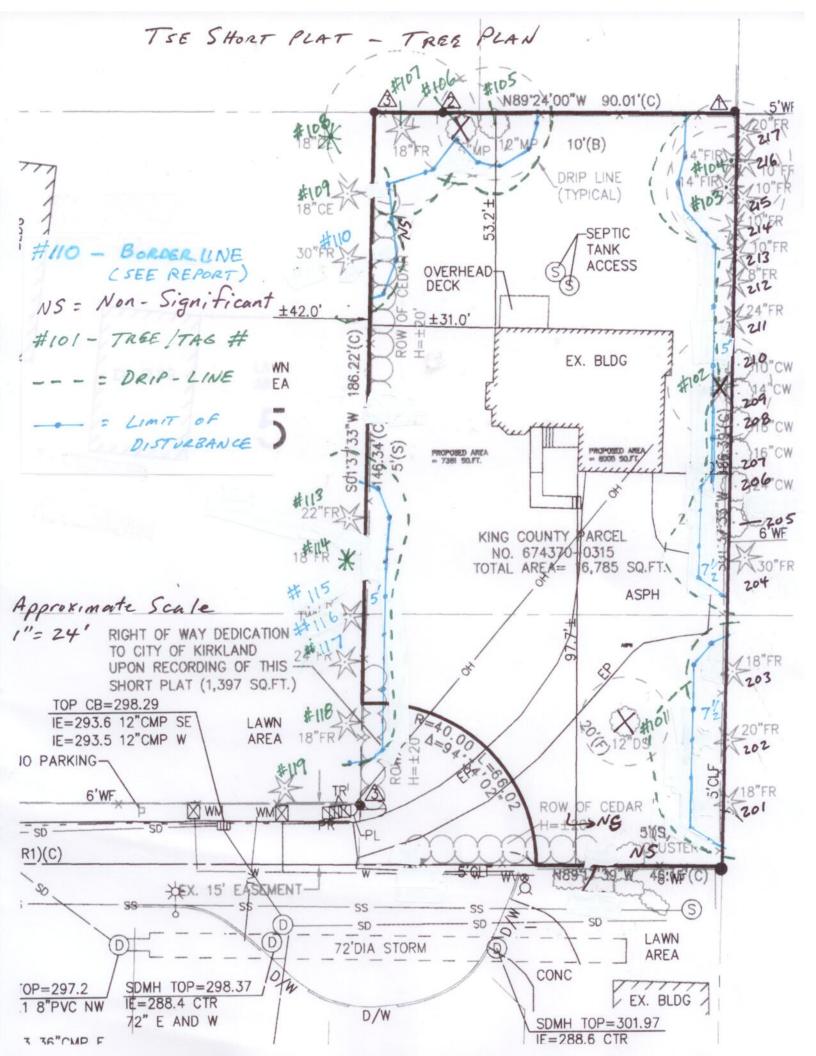
Parcel 6743700317 10448 126th Ave. NE Date: 12/2/2010 Inspector: Layton

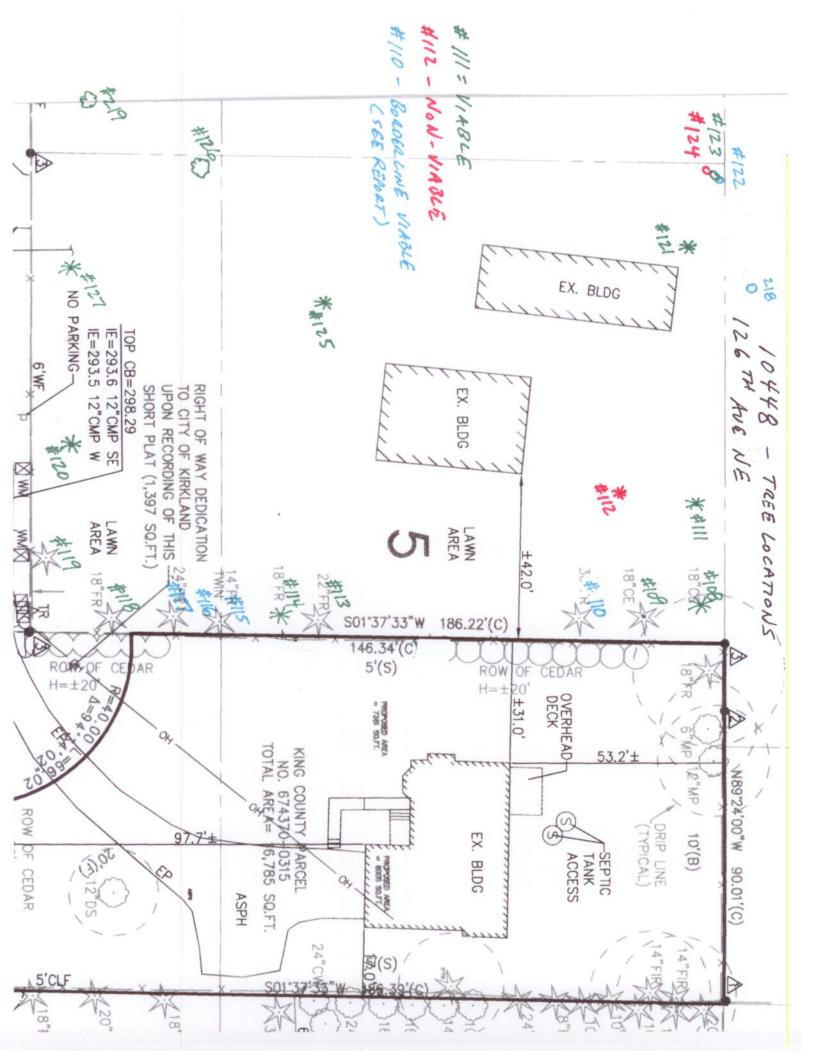
Native/

Planted/ Tree

Tree/Tag #	Species	Voluntee		Height	Credit	Drin-l	ine/Limits o	f Disturband	ce (feet)	Condition	Viahility	Comments
rroor rag r	Оросно	Volunto	, DDI I	rioigiit	Oroun	N	S	E	W	Condition	Viability	Commente
108	Douglas-fir	Р	20	78	6	14/na	8/12	10/12	15/12	good	viable	recent crown raising
109	Douglas-fir	Р	19	80	5.5	10/10	8/na	12/10	17/12	good	viable	no concerns
110	Douglas-fir	Р	25	88	na	10/10	16/12	14/12	18/12	fair-poor	borderline	fork at 20', codominant stems
111	Douglas-fir	Р	25	86	8.5	na	17/12	14/12	16/12	good	viable	recent crown raising
112	Austrian pine	Р	14	22	na	0/na	12/na	0/na	20/na	poor	non	root plate failure, leans on fence
113	Douglas-fir	Р	23	85	7.5	17/12	8/12	15/10	18/12	good	viable	no concerns
114	Douglas-fir	Р	20	84	6	8/na	8/na	14/10	18/12	good	viable	no concerns
115	Douglas-fir	Р	15	84	na	8/na	8/na	10/10	16/12	fair	borderline	115/116 fork at 2', included bark
116	Douglas-fir	Р	16	84	na	8/na	8/na	10/10	16/12	fair	borderline	can not isolate 115/116
117	Douglas-fir	Р	25	86	na	8/na	10/na	15/12	19/13	fair	borderline	fork at 16', codominant stems
118	Douglas-fir	Р	22	87	7	10/na	10/na	13/12	15/12	good	viable	minor structural defects, good color
119	Douglas-fir	Р	24	83	8	15/12	13/na	16/12	18/12	good	viable	minor structural defects, good color
120	Douglas-fir	Р	18	59	5	11/10	12/10	12/10	14/10	good	viable	crook in top, good taper, minor fork
121	Douglas-fir	Р	19	51	5.5	na	13/10	13/10	8/10	fair	viable	poor structure/form
122	bitter cherry	N	14	48	na	na	10/10	17/10	na	fair-poor	borderline	heavy lean north
123	bitter cherry	N	13	46	2.5	na	0/10	9/10	na	fair	viable	most of tree leans over property line
124	bitter cherry	N	13	48	na	na	18/na	12/na	na	poor	non	significant stem decay, high risk
125	Colorado blue spruce	Р	13	46	2.5	6/7	8/8	9/8	6/6	fair	viable	full crown, good color
126	Portuguese laurel	Р	9	25	1	12/8	14/8	13/6	na	fair	viable	2-9" trunks, more like large shrub
127	Douglas-fir	Р	27	86	9.5	13/11	13/na	15/12	14/9	fair-good	viable	narrow crown, minor struc defects

Parcel Trees - Drip-Line and Limits of Disturbance measurements from face of trunk





International Forestry Consultants, Inc

Tree Summary Table
For: Percy Tse Off-Site Trees

Date: 12/2/2010 Inspector: Layton

Native/

Planted/ Tree

Tree/Tag # Species	Volunte		Height	Credit	Drip-Li	ne/Limits o	f Disturband	ce (feet)	Condition	Viability	Comments
			· · · · · · · · ·		N	S	E	W			
201 Douglas-fir	Р	24	77	na	10/10	14/10	na	17/10	fair	viable	topped in past at +/- 24'
202 Douglas-fir	Р	25	79	na	13/na	12/na	na	20/10	fair-poor	borderline	topped in past at +/- 24', multiple tops
203 Douglas-fir	Р	18	47	na	12/8	4/na	na	9/7	fair-poor	borderline	poor structure, old topping
204 Douglas-fir	Р	33	86	na	10/na	15/na	na	16/8	fair	viable	lots of past branch failures
205 Lombardy poplar	Р	29	118	na	na	na	na	10/10	fair	viable	ok
206 Lombardy poplar	Р	27	114	na	na	na	na	8/8	fair-poor	borderline	fork at 50' - codominant stems
207 Lombardy poplar	Р	21	113	na	na	na	na	6/8	fair	viable	ok
208 Lombardy poplar	Р	17	112	na	na	na	na	5/7	fair	viable	ok
209 Lombardy poplar	Р	16	102	na	na	na	na	3/7	fair	viable	ok
210 Lombardy poplar	Р	16	102	na	na	na	na	3/7	fair	viable	ok
211 Lombardy poplar	Р	22	101	na	na	na	na	8/8	fair	viable	fork, moderate
212 Lombardy poplar	Р	10	76	na	na	na	na	3/6	fair	viable	ok
213 Lombardy poplar	Р	11	82	na	na	na	na	3/6	fair	viable	ok
214 Lombardy poplar	Р	14	96	na	na	na	na	4/8	fair	viable	ok
215 Lombardy poplar	Р	12	84	na	na	na	na	3/6	fair	viable	ok
216 Lombardy poplar	Р	16	96	na	na	na	na	3/na	fair	viable	ok
217 Lombardy poplar	Р	20	103	na	na	na	na	7/10	fair	viable	ok
218 purple leaf plum	Р	12	30	na	na	10/5	na	na	fair-poor	borderline	multiple trunks, past branch failures
219 balsam poplar	Р	35	88	na	na	na	20/6	na	fair-good	viable	plus 10' off property line

Trees on neighboring properties - Drip-Line and Limits of Disturbance measurements from existing fences